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# Background

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- 2011-2015: BSc in Ecology, Vilnius University
- 2015-2017: MSc in Geo-Information Science, Wageningen University & Research
- 2017-present: PhD in the Laboratory of Geo-information Science and Remote Sensing (GRS)
- 2020 onwards: Lecturer for MSc Geo-Information Science

# Projects funding my PhD

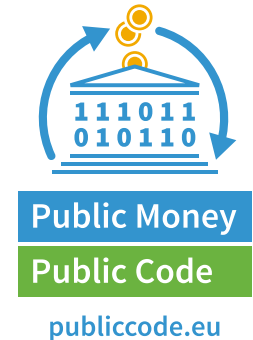
- European Commission (Joint Research Centre):
  - Copernicus Global Land Services – Land Cover (CGLOPS)
  - OpenEO (H2020)
- Both are international projects with many partner institutes:
  - VITO (Belgium) is a partner in both
  - IIASA (Austria) in CGLOPS
  - University of Münster, mundialis (Germany), TU Wien, EODC (Austria), EURAC (Italy), Sinergise (Slovenia), Solenix (Switzerland) in OpenEO



# Today's sessions

- Will cover both of the projects, and go into detail about my PhD itself:
  - Global land cover fraction mapping
  - Land cover change monitoring
- Practical related to each:
  - Make your own land cover map on GEE
  - Try out break detection in time series using the `bfast` package
  - ...or just enjoy exploring global land cover maps

# Software



- Fan of FOSS, supporter of Free Software Foundation Europe (FSFe)
- Like to work my own way:
  - Exclusively on Linux (primarily )
  - R as the primary language
  - Also Bash, , Python, JavaScript, C
  - R for heavy lifting, QGIS for visualisation, LaTeX for writing
- Code developed in the open on GitHub (GreatEmerald), usually under GPLv3+



# Programming style



- Started out with UnrealScript – mandatory object-oriented
- Transitioning to R makes me use simpler constructs:  
functions in separate files that do a particular task, saves  
time in the short term (but may cost time in the long run)
  - OO is great for frameworks, not so much for one-shot  
scripts; useful as an easy way to handle multiple inputs
- optparse package: run R scripts with arguments from Bash!
  - Pro: makes scripts very reusable
  - Con: makes scripts very reusable

# Hardware

- Maintain 4 beefy Linux servers in the GRS group
- Help with maintenance of computers for a small business
- Built my own computer and a miniserver hosting a website, cloud storage and computing (Gentoo Linux)



# bfast package

- The package bfast has not had updates for a while
- Made some additions, which spurred the bfast2/bfast project
- Aim is to have a new CRAN release with the new features
- More documentation
- More help to maintain is always welcome!
- Motivation: the more documentation and testing there is, the more people use it, the more useful the effort becomes.  
FOSS: solve a problem once, solve it for everyone forever  
Potentially also SCM (subpixel uncertainty-confusion matrix)




# Interests

- Statistics and machine learning, including global and regional models
- Time series analysis
- Sun-induced fluorescence research
  - Radiative transfer models
  - UAV-based remote sensing
  - Scaling from global to local
- Multidisciplinary science

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Thank you for  
your attention!

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To explore  
the potential  
of nature to  
improve the  
quality of life